

Utility Privatization of Wastewater Collection and Treatment and Potable Water and Service Water Systems at Picatinny Arsenal, New Jersey

PART: U.S. GOVERNMENT PROCUREMENTS

SUBPART: SERVICES

CLASSCOD: S--Utilities and Housekeeping Services--Potential Sources Sought

OFFADD: Defense Energy Support Center, 8725 John J. Kingman Rd., Room 3830, Fort Belvoir, VA 22060-6222

SUBJECT: S--SOURCES SOUGHT FOR PRIVATIZATION OF WASTEWATER COLLECTION AND TREATMENT AND POTABLE/SERVICE WATER SYSTEMS AT PICATINNY ARSENAL, NEW JERSEY

POC: Montrez Nicholson, Contract Specialist, (703) 767-9406, Defense Energy Support Center, (DESC-EC).

DESC: The Defense Energy Support Center (DESC), in conjunction with the United States Army, plans to offer the privatization of Wastewater Collection and Treatment and Potable and Service Water Systems at Picatinny Arsenal, Morris County, New Jersey.

Privatization is defined as the transfer of ownership and responsibility for the operation, maintenance, repair, future upgrades, and future utility systems replacement. As a result of this solicitation, the firm(s) will be selected to assume ownership of the system(s) to meet future needs of the government. The resulting contract, if awarded, will require the Contractor to furnish all facilities, labor, tools, materials, and equipment necessary to own, operate, and maintain the utility system(s). The Contractor shall manage the maintenance, repairs, replacement, etc. of the systems to assure continuous, adequate, and dependable service for each Government or tenant connection within the service area. The Contractor shall be responsible for each Government or tenant connection within the service area. The Contractor shall be responsible for funding all capital investments required to acquire, operate, and maintain the utility system(s) in a safe, reliable condition and to meet the requirements listed in the contract. Real property interests will be conveyed in the form of an Easement as an attachment to the RFP. The utility systems will be conveyed via a Bill of Sale upon award of the contract. Past performance information from potential Offeror's shall be submitted as directed by the RFP. The Installation and utility systems being privatized are described as follows:

## **OVERVIEW**

Picatinny Arsenal is located in New Jersey's Morris County, approximately 40 miles west of New York City. The installation has over 1,000 buildings, and covers nearly 6,500 acres. The Installation Management Agency is the proponent for all Installation infrastructure and support operations at Picatinny. Tenant organizations include the Armament Research, Development and Engineering Center (ARDEC), Program Executive Office for Ammunition, Program Executive Officer for Ground Combat Support, and the Program Executive Office for Soldier.

## **Wastewater Collection and Treatment System Description**

### ***WASTEWATER TREATMENT PLANT***

The WWTP has an estimated design capacity of 1.0 million gallons per day (MGD), is permitted to treat 0.50 MGD, and presently treats an average flow of 0.29 MGD. Lift Station No. 80A is located at the WWTP and lifts all sanitary waste into the plant for treatment. Wastewater receives primary treatment in two Imhoff tanks followed by secondary treatment using a fixed-film process where fixed nozzles distribute wastewater over rock media. Wastewater is then clarified in a 28-foot diameter secondary clarifier. Primary sludge and fixed-film humus (secondary clarifier sludge) is stored in the digestion compartment of the Imhoff tanks until it is stabilized. Stabilized sludge is then transported by service contract to a federally approved and permitted disposal site.

Treated effluent is pumped off government property for final treatment and disposal at the Rockaway Valley Regional Sewage Authority (RVRSA), a 12-MGD facility in Boonton, New Jersey, five miles away. A standby diesel generator supports the lift station and Picatinny pretreatment facility.

### ***COLLECTION SYSTEM***

The existing collection system is generally constructed of vitrified clay and polyvinyl chloride (PVC) pipe with manholes at approximately 350-foot intervals. System piping varies from 2-inch force mains to 18-inch gravity flow sewers. Most of the original system was installed in the 1930s and 1940s. The hilly topography of the Installation allows gravity flow of wastewater for short distances followed by lifting. Flows are generally in a southerly direction except for a small collection area that lies south of the wastewater treatment plant (WWTP) near the Main Gate. The wastewater collection system presently consists of approximately 137,230 feet of trunk sewers, mains, and force mains. The system includes 19 lift stations of many different designs ranging from ejector systems to simplex guide rail submersible pump designs, to dry well triplex systems.

## **Potable Water System Description**

The potable water system, initially constructed in the 1920s, has a current water demand of approximately 500,000 gallons. The system may include, but is not limited to, wells, pump stations, treatment plant, pipelines, valves, fire hydrants, storage facilities, pumps, and meters. Although not connected to the Picatinny potable water system, the potable water treatment facility for the Advanced Warhead Development Facility (AWDF) at Building 642 is included in this privatization study solicitation, and the AWDF potable water treatment facility shall be included with the sale of the Picatinny potable water system, should such a determination be made as a result of the solicitation.

### **POTABLE WATER PRODUCTION, TREATMENT, AND STORAGE**

Raw water is drawn from three main wells, No. 131, No. 410 (refurbished with limited capacity), and No. 302 (recently refurbished). Well water contains volatile organic compounds (VOCs), including trichloroethylene (TCE), which are removed in the treatment process.

The water treatment plant (WTP), Building No. 1383, was constructed in the mid-1980s. The WTP is rated at 1.0 million gallons per day (MGD) and serves only Picatinny Arsenal. Water demand presently averages 500,000 gallons per day (GPD) regardless of season. The New Jersey Department of Environment Protection water permit, which expires 30 April 2008, allows a maximum draw of ground and surface water not to exceed 1,788 million gallons per year or 149 million gallons per month. There are no connections that would permit emergency access to the nearby municipal systems.

Well pumps transfer raw water to a primary surge tank at the treatment facility where three raw-water pumps pressurize three 8-foot diameter x 16-foot long greensand filters. Potassium permanganate and soda ash are introduced into the raw-water flow to begin the iron and manganese removal process. Filter media is regenerated using potassium permanganate solution and greens and media rinse and is backwashed into a 16-foot diameter x 18-foot high backwash storage tank. Filtered water then flows under pressure to an air-stripping tower where TCE is removed followed by chlorination. Fluoridation completes the treatment process. Backwash wastes and residuals are discharged into the sanitary sewer system. Finished water is then pumped through a detention tank (completing the disinfection process) into elevated storage tanks located throughout the distribution system. Two ground-level storage reservoirs (No. 1381 and No. 1382) located at the treatment complex are replenished from the distribution system. An adjacent structure, Facility No. 1381-A, houses two fire protection pumps that draw water from the ground storage reservoirs and boost the flow in the potable water distribution system when needed. Standby power for the WTP is furnished by a 450 kW diesel generator set with sufficient capacity to operate treatment-related equipment as well as raw and treated water pumps. The WTP operation includes a small laboratory for analyzing water samples. A master meter at the WTP records gross plant output.

The WTP and distribution system is manned seven days per week, eight hours per day. Several critical elements of the water system are controlled from the WTP by a Supervisory Control and Data Acquisition (SCADA) system, utilizing remote terminal units (RTUs).

Three ground storage reservoirs, Tank Nos. 1381, 1382 (mentioned above), and 3214 plus three elevated storage tanks, Nos. 1300, 3141, and 3254 provide a total of approximately 1.5 million gallons of potable water storage. In addition raw water is stored in Tank 1091, a 100,000 gallon elevated tank. Water is pumped to Tank 1091 and is used to supply the water plant, as well as providing water to a series of fire hydrants north of the tank.

#### **POTABLE WATER TREATMENT FACILITY FOR ADVANCED WARHEAD DEVELOPMENT FACILITY (AWDF)**

The potable water treatment facility at the AWDF, located in Building 642, is similar to the operation at the Water Treatment Plant at Building 1383. The AWDF treatment facility includes an air stripper with blower, three chemical mixers, and chlorine solution and potassium permanganate for alkalinity feed. The treatment facility also has a green sand filter for iron and manganese removal; monitor equipment for flow, turbidity, pH and cl<sub>2</sub>; a storage tank; a pressure tank; and, a carbon filter.

## **POTABLE WATER DISTRIBUTION SYSTEM**

Due to significant changes in topography, three distinct pressure zones exist within the distribution system: a low-pressure zone (Lower Area), a medium pressure zone (Navy Hill Area), and a high-pressure zone (1300 and 1400 areas). Two pump stations are used in the distribution network: Structure No. 3013, which maintains the water level in Tank 3214 and Structure 1061, an in-line pumping system. A standby generator set, capable of operating a single 100 gallons per minute (gpm) transfer pump, supports Structure No. 3013.

The distribution system is constructed of approximately 217,000 linear feet of water mains and lateral lines ranging in size from less than 2 inches to 12 inches. The system includes main valves, pressure reducing stations, valve vaults, post indicator valves, monitoring and warning systems, and fire hydrants. The majority of the system was installed prior to 1950 and consists of unlined cast iron. During the late 1990s through the present, projects have been undertaken to replace a significant amount of older pipe. The most recent project, when completed in the next 12 months, will have installed 33,600 linear feet of ductile iron pipe. No service laterals are included in these additions. The new pipe runs parallel to existing pipe and is connected to this pipe at frequent intervals. Once laterals to the new lines are completed, the old lines could then be retired. The number and location of hydrants are adequate for fire fighting. System valve locations are adequate for isolating sections of the distribution system for repairs.

## **Service Water System Description**

Picatinny employs a service water system that is totally separate from the potable system. The system supplies water for industrial processes, boiler make-up, non-contact cooling, fire suppression, building sprinklers, deluge systems, and flush water for numerous restrooms. The system also provides irrigation for an 18-hole golf course; however, the golf course sub-system is maintained by golf course personnel and is excluded from privatization. Service water is neither treated nor chlorinated since chlorine residuals would be incompatible with some industrial applications.

## **WATER PRODUCTION AND STORAGE**

Raw service water is pumped from two lakes on the Installation. Each lake supplies a separate area of the distribution system resulting in two distinct service water storage and distribution systems. The two systems are not interconnected.

Lake Picatinny, with a volume of 560 acre-feet and a surface area of 100 acres, supplies approximately 95 percent of the service water for the Installation. Three centrifugal pumps located in the Power House (steam generating plant, Building 506) pull lake water through coarse intake screens and fill a cluster of ground storage tanks (623, a, b, c, d, and e). The water is then distributed into the service water system, replenishing ground storage Tanks 75, 75a, 639, as needed. Water levels are monitored visually in the Tank 623 cluster with no telemetry or water level sensors currently in use. Raw service water is not metered at the Power House; however, pump run time records are maintained by Power House personnel, which are then translated in estimates of the volume of water delivered to the system. Estimated pumped volumes average 450,000 to 500,000 gallons per day. Pressures in the lower areas of the average 80 pounds per square inch (psi).

Lake Denmark, with a volume of 1,015 acre-feet and a surface area of 280 acres, provides service water for the 1500 and 3500-3800 areas. Two (2) raw water pumps located in Building 1219 pull water through a coarse screen intake and lift it into Tank 1500 for distribution. Estimated flow, based on pump run times, averages 25,000 to 30,000 gallons per day. The water level in Tank 1500 is monitored remotely at the Water Treatment Plant.

#### **SERVICE WATER DISTRIBUTION SYSTEM**

The service water system consists of approximately 138,000 feet of mains and lateral lines ranging in size from less than 2 inches to 12 inches. The service water system generally serves those buildings with numbers smaller than 100, 100-900, 1500, 3500, and the 3800 group (approximately 110 buildings). The majority of the system was constructed in the 1940s and has been extended to accommodate additional buildings. Since the water is not treated, there are frequent problems associated with leaking valves that do not seat, water odor, etc. Spent service water, not used for non-contact cooling, is discharged to the sanitary wastewater collection system. A large percentage of the one-pass cooling water is discharged directly to the environment at eight EPA New Jersey Pollution Discharge Elimination System (NJPDES)-permitted outfalls.

**REQUIREMENTS:** The general goal of the privatization process at Vancouver Barracks is to transfer all Capital assets of the electric, water, and wastewater treatment facilities to a municipal, private, regional, district or cooperative utility company or other non-Department of Defense entity to own and operate the systems on a long term contractual basis. Specific requirements under the contract will be: (1) the ability to service all areas within Vancouver Barracks and all Federal service premises currently served by Government owned systems that are the subject of this requirement; (2) the ability to provide access to two [2] independent potable water sources to provide redundant supply linkage. Independent potable water sources are two separate sources of supply from two separate treatment facilities. One area of consideration [as a source] may be the existing Vancouver Barracks plant.

**PROCESS:** This request is to gather information from interested parties and is an essential step in determining market interest for the privatization of the water and wastewater systems at Picatinny Arsenal. In order to minimize costs both to potentially interested parties and the government, this notice is issued to determine market interest and feasibility as well as determining marketing strategies for privatizing the utility systems. Should insufficient credible interest be identified for a privatization action, it is highly likely that no formal solicitation will be issued. Should interest be determined sufficient, a formal Request for Proposals (RFP) may be forthcoming. Interested parties should provide a statement of interest on company letterhead. The statement of interest must not exceed a total length of 15 pages. The statement shall include as a minimum, the following information: (1) Capability and experience in the ownership, operation and maintenance of similar systems; (2) financial Capability to purchase, upgrade, expand, operate and maintain utility systems; (3) conceptual rate plan (i.e., will charges for utility service be made from existing rates or from rates developed specifically for service at the individual installation(s); (4) discussion of your conceptual basis for a proposed purchase price (Capitalized earnings value, replacement cost new less depreciation, original cost less depreciation, or other); (5) understanding of the federal, state and local environmental laws and

regulations and familiarity and experience with environmental compliance procedures and regulations for the State of New Jersey and US Environmental Protection Agency Regions; (6) Company point of contact, phone no. and e-mail address.

SITE VISIT AND DATA: Neither a site visit nor the provision of additional data on the utility systems is considered necessary for the preparation and submittal of statement of interest. If a site visit and the provision of additional data are later determined necessary, notification will be provided by way of an amendment to this announcement.

DUE DATE: Statements of interest must be submitted to Defense Energy Support Center (DESC-EC) by 3:00 P.M., Eastern Standard Time on Monday, September 13, 2004. Sources may address responses to: Defense Energy Support Center, 8725 John J. Kingman Rd., Room 3830, ATTN: Montrez Nicholson, DESC-EC, Ft. Belvoir, VA 22060-6222.

LINK DESC: For future Privatization solicitation information

LINKURL: <http://www.desc.dla.mil/DCM/DCMPage.asp?pageid=246>

EMAIL DESC: For additional information or clarification

EMAIL ADD: [Montrez.Nicholson@dlamail.mil](mailto:Montrez.Nicholson@dlamail.mil)